IN THE CLAIMS

The following is a complete listing of the claims, and replaces all earlier versions and listings.

1. (Previously Presented) A method of transforming a digital signal representing a physical quantity into signals of frequency sub-bands distributed in at least two different frequency bands and in at least two different resolutions, comprising the steps of:

spatially dividing the signal into first blocks all having a same predetermined first number of samples,

transforming each of the first blocks into a plurality of second blocks by a space-frequency transformation, any second block under consideration having a second respective number of samples which depends on the resolution of the second block under consideration and which is inferior to a predetermined third number, and containing samples selected according to their frequency, and

grouping second blocks having the same second number of samples and samples selected according to the same frequency band, and issuing from the transformation of spatially adjacent first blocks, in order to form third blocks all having the predetermined third number of samples.

2. (Previously Presented) The method according to Claim 1, in which the transformation is a wavelet transformation.

3. (Previously Presented) The transformation method according to Claim 1 or 2, in which the first blocks overlap in pairs on a fourth predetermined number of samples.

4. (Canceled)

5. (Previously Presented) The method according to Claim 1 or 2, in which the first blocks are processed in a predetermined order, such that the signal is transformed zone by zone, a zone of the signal being processed at all the resolution levels before passing to a following zone.

6. (Canceled)

7. (Previously Presented) A method of coding a digital signal representing a physical quantity into signals of frequency sub-bands distributed in at least two different frequency bands and in at least two different resolutions, comprising the steps of:

spatially dividing the signal into first blocks all having a same predetermined first number of samples,

transforming each of the first blocks into a plurality of second blocks by a space-frequency transformation, any second block under consideration having a second respective number of samples which depends on the resolution of the second block

under consideration and which is inferior to a predetermined third number, and containing samples selected according to their frequency, and

grouping second blocks having the same second number of samples and samples selected according to the same frequency band, and issuing from the transformation of spatially adjacent first blocks, in order to form third blocks all having a the predetermined third number of samples.

8. (Previously Presented) The method according to Claim 7, in which the transformation is a wavelet transformation.

9. (Previously Presented) The method according to Claim 7 or 8, in which the first blocks overlap in pairs on a fourth predetermined number of samples.

10. (Canceled)

11. (Previously Presented) The method according to Claim 7 or 8, in which the first blocks are processed in a predetermined order, such that the signal is transformed zone by zone, a zone of the signal being processed at all the resolution levels before passing to a following zone.

12. (Canceled)

13. (Previously Presented) The method according to Claim 7 or 8, further comprising the steps of quantization and entropic coding of the transformed signal.

14. (Previously Presented) The method according to any one of Claims 1, 2, 7, and 8, in which the digital signal is an image signal.

15. (Currently Amended) A device for transforming a digital signal representing a physical quantity into signals of frequency sub-bands distributed according to at least two different frequency bands and according to at least two different resolutions, comprising:

means for spatially dividing the signal into first blocks all having a same predetermined first number of samples,

means for transforming each of the first blocks into a plurality of second blocks by a space-frequency transformation, any second block under consideration having a second respective number of samples which depends on the resolution of the second block under consideration and which is inferior [[by]] to a predetermined third number, and containing samples selected according to their frequency, and

means for grouping second blocks having the same second number of samples and samples selected according to the same frequency band, and issuing from the transformation of spatially adjacent first blocks, in order to form third blocks all having the predetermined third number of samples.

16. (Previously Presented) The device according to Claim 15, in which the transformation means are adapted to implement a wavelet transformation.

17. (Previously Presented) The device according to Claim 15 or 16, in which the division means are adapted to form first blocks which overlap in pairs on a fourth predetermined number of samples.

18. (Previously Presented) The device according to Claim 15 or 16, in which the division means are adapted to form first blocks which are adjacent.

19. (Previously Presented) The device according to Claim 15 or 16, adapted to process the first blocks in a predetermined order, such that the signal is transformed zone by zone, a zone of the signal being processed at all the resolution levels before passing to a following zone.

20. (Canceled)

21. (Previously Presented) A device for coding a digital signal representing a physical quantity into signals of frequency sub-bands distributed according to at least two different frequency bands and according to at least two different resolutions, comprising:

means for spatially dividing the signal into first blocks all having a same predetermined first number of samples,

means for transforming each of the first blocks formed at the previous step into a plurality of second blocks by a space-frequency transformation, any second block under consideration having a second respective number of samples which depends on the resolution of the second block under consideration and which is inferior to a predetermined third number, and containing samples selected according to their frequency, and

means for grouping second blocks having the same second number of samples and samples selected according to the same frequency band, and issuing from the transformation of spatially adjacent first blocks, in order to form third blocks all having the predetermined third number of samples.

22. (Previously Presented) The device according to Claim 21, in which the transformation means are adapted to implement a wavelet transformation.

23. (Previously Presented) The device according to Claims 21 or 22, in which the division means are adapted to form first blocks which overlap in pairs on a fourth predetermined number of samples.

24. (Previously Presented) The device according to Claim 21 or 22, in which the division means are adapted to form first blocks which are adjacent.

25. (Previously Presented) The device according to Claim 21 or 22, wherein said device processes the first blocks in a predetermined order, such that the signal

is transformed zone by zone, a zone of the signal being processed at all the resolution levels before passing to a following zone.

26. (Canceled)

27. (Previously Presented) The device according to Claim 21 or 22, further comprising means for the quantization and entropic coding of the transformed signal.

28. (Previously Presented) The device according to any one of Claims 15, 16, 21, and 22, adapted to process a digital signal which is an image signal.

29. (Previously Presented) The device according to any one of Claims 15, 16, 21, and 22, such that the division, transformation and grouping means are incorporated in:

a controller,

a read only memory containing a program for coding each of the blocks of data, and

a random access memory containing registers adapted to record variables modified during the running of the program.

30. (Previously Presented) A digital apparatus including means of implementing the transformation method according to any one of Claims 1, 2, 7, and 8.

31. (Previously Presented) A digital apparatus including the device according to any one of Claims 15, 16, 21, and 22.

32. (New) The method according to claim 5, in which a number of first blocks that form a zone is determined by a number of resolution levels to be applied.

33. (New) The method according to Claim 5, in which the predetermined order is a zigzag scan of groups of four adjacent blocks.

34. (New) The method according to Claim 7 or 8, further comprising steps of quantizing and entropic coding that are applied to each of the third blocks as soon as they are formed.

35. (New) The method according to Claim 11, in which a number of first blocks that form a zone depends on a number of resolution levels to be applied.

36. (New) The method according to Claim 11, in which the predetermined order is a zigzag scan of groups of four adjacent blocks.

37. (New) The device according to any one of Claims 15, 16, 21, and 22, such that the dividing, transforming, and grouping means are incorporated in:

a controller,

a reorganization buffer memory module,

a vertical filtering module,

a horizontal filtering module,

a first buffer memory module,

a second buffer memory module, and

an entropic coding and quantization module.

38. (New) The device according to Claim 37, in which the entropic coding and quantization module is adapted to process blocks of the predetermined third number of samples.

39. (New) The device according to Claim 37, in which the first buffer memory module is adapted to process low frequency sub-bands.

40. (New) The device according to Claim 37, in which the second buffer memory module is adapted to process the sub-bands that do not contain samples of low frequency in the two filtering directions.